

11. (currently amended) A transmitter for a wireline multi-carrier communication system comprising:
 a modulator for modulating symbols for transmission over a pre-determined number of carriers; and
 a carrier allocator arranged to identify all available carrier groups having the pre-determined number of carriers; and
 a replicator arranged to output a replicate of each of the symbols on each of the available carrier groups.

12. (currently amended) A ~~modem for a wireline multi-carrier communication system~~ comprising a the transmitter according to claim ~~10~~ 11.

13 – 16 (cancelled)

17. (currently amended) A transmitter according to claim ~~10~~ 11 ~~additionally comprising;~~
 ~~a phase shifter wherein the replicator is~~ arranged to determine the transmission phase on ~~the~~ available carriers responsive to pre-determined carrier phase-shift data.

18 – 19 (cancelled)

20. (currently amended) A program for a computer on a machine readable medium for transmitting symbols in a wireline multi-carrier communication system in which each symbol is modulated for transmission over a carrier group of ~~pre-determined size~~ ^{size} known, the program being arranged to perform the steps of:
 identifying all available carrier groups; and

transmitting a replicate of the symbol on each of at least half of the available carrier groups.

21. (original) A program for a computer on a machine readable medium for transmitting initialisation messages in a wireline multi-carrier communication system, the program being arranged to perform the steps of:

 partitioning an initialisation message into one or more symbols;
 modulating one of the symbols for transmission over a carrier group of known size;
 identifying all available carrier groups; and
 transmitting a replicate of said one of the symbols on each available carrier group.

22. (currently amended) A method of establishing a connection between a transmitter and a receiver in a wireline communication system, the method comprising the steps of:

 at the transmitter, partitioning a connection initialisation message into one or more symbols, modulating each symbol for transmission over a carrier group of predetermined size, identifying all available carrier groups, and transmitting a replicate of each symbol on at least half the available carrier groups; and at the receiver, receiving said replicates of each symbol, reconstructing the initialisation message from said received replicate symbols, and opening the connection in response to the initialisation message.

Cancelled
23. (~~withdrawn~~) A method of receiving symbols in a wireline multi-carrier communication system in which each symbol is modulated for transmission over a carrier group of pre-determined size, the method comprising the steps of:
 receiving signals on a plurality of carrier groups;

selecting one or more of the plurality of carrier groups responsive to a measure of respective signal quality;

recovering a symbol from signals received on the at least one of the plurality of carrier groups.

Cancelled
24. ~~(withdrawn)~~

A method to claim 22 in which the step of recovering comprises the step of:

summing the signals received on the at least one of the plurality of carrier groups.

Cancelled
25. ~~(withdrawn)~~

A receiver for a wireline multi-carrier communication system comprising:

a carrier receiver arranged to receive signals on a plurality of carrier groups;

a carrier group selector arranged to select at least one of the plurality of carrier groups, responsive to a measure of respective signal quality;

a symbol recovery unit arranged to recover symbols from the at least one of the plurality of carrier groups.